"Pseudo-MPEC" for 2020 SW

Created 2020 Sep 20 8:49:35 UT using Find_Orb

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- Astrometry
- Observing stations
- Orbital elements
- Residuals
- Ephemeris
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- Click here to search DSS2 images for this object using Skymorph
- Click here to search Spacewatch images for this object using Skymorph

Orbit Simulator View

Astrometry:

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     K20S00W  C2020 09 18.31827 23 47 17.28 +22 21 41.8          21.4 GVES083G96
     K20S00W  C2020 09 18.32395 23 47 16.44 +22 21 40.9          21.0 GVES083G96
     K20S00W  C2020 09 18.32413823 47 37.737+22 22 34.61         21.49GVES083F51
     K20S00W  C2020 09 18.32961 23 47 15.55 +22 21 38.6          21.5 GVES083G96
     K20S00W  C2020 09 18.33529 23 47 14.75 +22 21 37.5          21.6 GVES083G96
     K20S00W  C2020 09 18.34869123 47 34.552+22 22 44.33         21.39GVES083F51
     K20S00W  C2020 09 18.43246 23 47 02.27 +22 20 39.4          21.8 GVES083V06
     K20S00W  C2020 09 18.43563 23 47 01.93 +22 20 36.9          21.4 GVES083V06
     K20S00W  C2020 09 18.43880 23 47 01.64 +22 20 34.2          21.3 GVES083V06
     K20S00W  C2020 09 18.44197 23 47 01.32 +22 20 31.4          21.5 GVES083V06
     K20S00W  C2020 09 18.47602 23 46 58.62 +22 19 59.3                VES083V06
     K20S00W  C2020 09 18.47919 23 46 58.39 +22 19 56.5          21.7 GVES083V06
     K20S00W  C2020 09 18.48235 23 46 58.25 +22 19 53.5                VES083V06
     K20S00W 2C2020 09 18.95524023 47 48.545+22 19 36.21         20.7 GVES083J04
     K20S00W 2C2020 09 18.96295623 47 47.450+22 19 38.43         21.0 GVES083J04
     K20S00W 2C2020 09 18.97065623 47 46.337+22 19 39.95         20.8 GVES083J04
     K20S00W IC2020 09 19.04999023 47 21.26 +22 16 54.3          21.2 GVES083L01
     K20S00W KC2020 09 19.05311023 47 20.92 +22 16 51.9          21.3 GVES083L01
     K20S00W KC2020 09 19.06052023 47 20.13 +22 16 46.1          21.0 GVES083L01
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Station data:

(F51) Pan-STARRS 1, Haleakala (N20.707235 W156.255910) US/Hawaii.
Observers N. Primak, A. Schultz, S. Watters, J. Thiel, T. Goggia. Measurer PS1 Science Consortium. 1.8-m Ritchey-Chrétien + CCD.
(G96) Mt. Lemmon Survey (N32.442754 W110.788720) US/Arizona. Observers B. M. Africano, E. J. Christensen, G. A. Farneth, D. C. Fuls, A. R. Gibbs, A. D. Grauer, H. Groeller, J. A. Johnson, R. A. Kowalski, S. M. Larson, G. J. Leonard, R. L. Seaman, F. C. Shelly. 1.5-m reflector + 10K CCD.
(J04) ESA Optical Ground Station, Tenerife (N28.300924 W16.511830) Canary Islands (Spain). Observer D. Abreu. Measurers M. Micheli, D. Koschny, E. Schwab, M. Busch, A. Knöfel. 1.0-m f/4.4 reflector + CCD.
(L01) Višnjan Observatory, Tičan (N45.290900 E13.749300) Croatia.
Observers K. Korlević, E. Pettarin. Measurer E. Pettarin. 1.0-m f/2.9 reflector + CCD.
(V06) Catalina Sky Survey-Kuiper (N32.416847 W110.732550) US/Arizona.
Observers B. M. Africano, E. J. Christensen, G. A. Farneth, D. C. Fuls, A. R. Gibbs, A. D. Grauer, H. Groeller, J. A. Johnson, R. A. Kowalski, S. M. Larson, G. J. Leonard, R. L. Seaman, F. C. Shelly. 1.55-m reflector + CCD.

Orbital elements: 2020 SW

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   Perihelion 2020 Dec 11.939896 +/- 0.16 TT = 22:33:27 (JD 2459195.439896)
Epoch 2020 Sep 19.0 TT = JDT 2459111.5   Earth MOID: 0.0002   Find_Orb
M 279.07496432 +/- 0.17            (J2000 ecliptic)
n   0.96408310 +/- 0.000226        Peri.  277.79510 +/- 0.09
a   1.01482946 +/- 0.000158        Node   181.47497 +/- 0.055
e   0.1913952 +/- 0.00184          Incl.    4.23889 +/- 0.044
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P 1.02/373.40d H 29.0 G 0.15 U 7.1
q 0.82059592 +/- 0.00174 Q 1.20906299 +/- 0.00206
From 19 observations 2020 Sept. 18-19 (17.8 hr); mean residual 0".23

Residuals in arcseconds:

200918	G96	.26+	.19-	200918	V06	.28-	.02+	200918	J04	.01-	.02+
200918	G96	.18+	.34+	200918	V06	.01+	.02+	200918	J04	.10+	.07-
200918	F51	.02+	.07-	200918	V06	.22-	.03-	200919	L01	.06-	.10+
200918	G96	.66-	.34-	200918	V06	.32+	.27-	200919	L01	.07-	.07+
200918	G96	.26-	.36+	200918	V06	.06-	.10+	200919	L01	.12-	.09+
200918	F51	.12+	.01+	200918	V06	.68+	.28+				
200918	V06	.01+	.14-	200918	J04	.12+	.26-				

Ephemerides for Chelmsford:

Date (UTC).d	RA	Dec	delta	r	elong	mag	'/hr	PA	" sig	PA
2020 09 20.0	23 48 01.869	+22 09 55.96	.01481	1.0180	156.7	21.0	1.32	252.5	1.82	127
2020 09 20.1	23 47 49.856	+22 08 29.99	.01448	1.0176	156.8	21.0	1.24	230.5	1.83	142
2020 09 20.2	23 47 43.972	+22 06 15.68	.01417	1.0173	156.9	20.9	1.05	186.3	2.21	153
2020 09 20.3	23 47 48.337	+22 03 39.59	.01385	1.0170	156.9	20.9	1.44	138.4	2.95	154
2020 09 20.4	23 48 03.315	+22 01 16.33	.01354	1.0167	157.0	20.8	2.06	115.1	4.01	148
2020 09 20.5	23 48 25.247	+21 59 35.37	.01321	1.0163	157.1	20.8	2.31	102.8	5.36	139
2020 09 20.6	23 48 47.708	+21 58 49.52	.01288	1.0160	157.1	20.7	1.97	94.0	6.85	132
2020 09 20.7	23 49 03.839	+21 58 49.27	.01253	1.0157	157.2	20.6	1.07	84.9	8.17	127
2020 09 20.8	23 49 08.961	+21 59 05.03	.01219	1.0153	157.2	20.6	0.12	306.9	9.04	125
2020 09 20.9	23 49 02.535	+21 58 57.11	.01185	1.0150	157.2	20.5	1.11	258.1	9.37	127
2020 09 21.0	23 48 48.669	+21 57 50.50	.01152	1.0147	157.3	20.4	1.64	244.0	9.46	133
2020 09 21.1	23 48 34.803	+21 55 29.01	.01119	1.0144	157.4	20.4	1.64	221.0	9.94	141
2020 09 21.2	23 48 28.957	+21 52 02.72	.01088	1.0140	157.5	20.3	1.59	179.0	11.4	147
2020 09 21.3	23 48 36.586	+21 48 05.02	.01056	1.0137	157.6	20.3	2.20	138.8	13.9	148
2020 09 21.4	23 48 58.339	+21 44 20.15	.01025	1.0134	157.7	20.2	3.03	118.0	17.5	145
2020 09 21.5	23 49 29.604	+21 41 26.26	.00992	1.0131	157.7	20.1	3.37	106.8	21.9	139
2020 09 21.6	23 50 02.023	+21 39 40.41	.00958	1.0127	157.8	20.0	2.93	100.0	26.7	134
2020 09 21.7	23 50 26.461	+21 38 50.63	.00924	1.0124	157.9	19.9	1.74	97.6	31.2	131
2020 09 21.8	23 50 36.448	+21 38 17.92	.00890	1.0121	157.9	19.9	0.34	148.8	34.7	130
2020 09 21.9	23 50 30.948	+21 37 08.43	.00856	1.0117	158.0	19.8	1.38	237.7	37.0	131
2020 09 22.0	23 50 15.302	+21 34 32.76	.00822	1.0114	158.0	19.7	2.25	229.5	39.0	136
2020 09 22.1	23 49 59.719	+21 30 05.67	.00790	1.0111	158.1	19.6	2.51	206.8	42.4	141
2020 09 22.2	23 49 55.627	+21 23 57.59	.00758	1.0107	158.3	19.5	2.86	170.6	48.7	145
2020 09 22.3	23 50 11.251	+21 16 51.81	.00727	1.0104	158.4	19.4	3.98	139.5	58.6	146
2020 09 22.4	23 50 48.243	+21 09 48.11	.00695	1.0101	158.6	19.3	5.29	122.0	72.4	144
2020 09 22.5	23 51 40.703	+21 03 39.43	991055	1.0098	158.7	19.2	5.96	112.6	89.7	140
2020 09 22.6	23 52 36.946	+20 58 50.30	940829	1.0094	158.9	19.1	5.49	108.6	110	136
2020 09 22.7	23 53 23.433	+20 55 03.77	889503	1.0091	159.0	19.0	3.94	112.0	130	134
2020 09 22.8	23 53 49.756	+20 51 21.03	837804	1.0088	159.1	18.8	2.23	140.9	150	133
2020 09 22.9	23 53 53.177	+20 46 15.36	786600	1.0084	159.2	18.7	2.70	193.6	168	134
2020 09 23.0	23 53 41.031	+20 38 18.53	736559	1.0081	159.4	18.5	4.33	199.9	189	138
2020 09 23.1	23 53 29.545	+20 26 31.68	687892	1.0078	159.6	18.4	5.78	184.4	218	142
2020 09 23.2	23 53 38.887	+20 10 46.76	640264	1.0074	159.9	18.2	7.75	160.9	263	145
2020 09 23.3	23 54 26.139	+19 51 46.14	592923	1.0071	160.2	18.0	10.86	141.1	331	145
2020 09 23.4	23 55 59.121	+19 30 37.83	544995	1.0068	160.7	17.8	14.53	128.8	429	144
2020 09 23.5	23 58 13.558	+19 08 15.38	495811	1.0064	161.1	17.6	17.64	122.8	567	141
2020 09 23.6	00 00 54.460	+18 44 34.50	445146	1.0061	161.5	17.4	19.45	122.0	756	138
2020 09 23.7	00 03 41.263	+18 17 52.44	393292	1.0058	162.0	17.1	20.22	127.2	1010	136
2020 09 23.8	00 06 15.994	+17 44 07.79	340936	1.0054	162.6	16.7	21.83	138.7	1356	136
2020 09 23.9	00 08 34.097	+16 56 08.54	288898	1.0051	163.4	16.4	27.83	151.3	1859	137
2020 09 24.0	00 10 58.201	+15 41 52.03	237821	1.0047	164.7	15.9	42.27	157.0	2675	140
2020 09 24.1	00 14 37.842	+13 39 46.41	187914	1.0044	166.6	15.3	72.42	155.3	4216	144
2020 09 24.2	00 22 13.951	+10 02 26.10	138897	1.0040	169.6	14.5	141.7	150.8	7703	147
2020 09 24.3	00 41 05.566	+02 22 10.32	90375	1.0037	170.9	13.6	352.1	147.3	300'	148
2020 09 24.4	01 49 59.265	-22 07 02.29	44824	1.0033	145.9	12.8	1483	143.3	19d	145
2020 09 24.5	10 18 07.265	-45 21 06.92	39873	1.0028	50.6	16??	1850	50.2	51d	52

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